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 \* W E L C O M E T O T H E \*  
 \* U . S . P A T E N T T E X T F I L E \*  
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=> s bioglass or bioactive(w)glass or bone(w) (substitute or filler)  
 173 BIOGLASS  
 2737 BIOACTIVE  
 338501 GLASS  
 48 BIOACTIVE (W) GLASS  
 29108 BONE  
 45379 SUBSTITUTE  
 72596 FILLER  
 119 BONE (W) (SUBSTITUTE OR FILLER)  
 L1 317 BIOGLASS OR BIOACTIVE (W) GLASS OR BONE (W) (SUBSTITUTE OR FILLER)

=> s l1 and sol(w)gel  
 17061 SOL  
 148033 GEL  
 2891 SOL (W) GEL  
 L2 10 L1 AND SOL (W) GEL

=> s l2 and (aging or age? or heat? or oven#)  
 38650 AGING  
 440995 AGE?  
 776921 HEAT?  
 95319 OVEN#  
 L3 10 L2 AND (AGING OR AGE? OR HEAT? OR OVEN#)

=> s l3 and (dry? or lyophil? or dessicat?)  
 396585 DRY?  
 21762 LYOPHIL?  
 2466 DESSICAT?  
 L4 9 L3 AND (DRY? OR LYOPHIL? OR DESSICAT?)

=> s l4 and grind? and particle(w)size#  
 76219 GRIND?  
 165545 PARTICLE  
 934538 SIZE#  
 107886 PARTICLE (W) SIZE#  
 L5 1 L4 AND GRIND? AND PARTICLE (W) SIZE#

=> d l4 1-9

1. 5,693,513, Dec. 2, 1997, Encapsulation of living tissue cells in an organosilicon; Edward J. A. Pope, 435/176, 182, 382 :IMAGE AVAILABLE:
2. 5,681,872, Oct. 28, 1997, Bioactive load bearing bone graft compositions; Erik M. Erbe, 523/114; 106/35, 634, 691; 260/998.11; 501/70; 523/113, 115; 524/414, 456 :IMAGE AVAILABLE:
3. 5,676,720, Oct. 14, 1997, Method of forming a porous glass substrate; Paul Ducheyne, et al., 65/17.5, 17.3, 17.6, 22, 23, 31, 33.1, 33.9 :IMAGE AVAILABLE:
4. 5,648,301, Jul. 15, 1997, Bioactive material template for in vitro synthesis of bone tissue; Paul Ducheyne, et al., 501/39, 55, 63, 70 :IMAGE AVAILABLE:

6. A **bioactive glass** powder consisting essentially of  $\text{SiO}_2$ ,  $\text{CaO}$  and  $\text{P}_2\text{O}_5$  prepared using a **sol-gel** process and having pores with a diameter range of from about 1.2 to about 10 nm and a surface area of at least 200  $\text{m}^2/\text{g}$ , wherein the weight percentage of  $\text{SiO}_2$  is more than 60 but no more than 86, the weight percentage of  $\text{CaO}$  is at least 4 but less than 33, and the weight percentage of  $\text{P}_2\text{O}_5$  is at least 3 but no more than 15.

5. 5,643,789, Jul. 1, 1997, Bioactive material template for in vitro synthesis of bone tissue; Paul Ducheyne, et al., 435/402, 24/422; 435/1.1, 325, 378 :IMAGE AVAILABLE:

6. 5,591,453, Jan. 7, 1997, Incorporation of biologically active molecules into bioactive glasses; Paul Ducheyne, et al., 424/484, 422, 601, 602, 724; 501/11, 12, 32, 53, 55, 63, 72 :IMAGE AVAILABLE:

7. 5,074,916, Dec. 24, 1991, Alkali-free bioactive **sol-gel** compositions; Larry L. Hench, et al., 106/35; 423/308, 311; 501/2, 5, 10, 63, 72, 80; 623/11, 16 :IMAGE AVAILABLE:

8. 4,994,414, Feb. 19, 1991, Method of producing bioactive ceramics containing apatite crystal; Nobuyuki Yamamoto, et al., 501/12, 32, 63, 72, 73 :IMAGE AVAILABLE:

9. 4,737,411, Apr. 12, 1988, Controlled pore size ceramics particularly for orthopaedic and dental applications; George A. Graves, Jr., et al., 428/403; 106/35; 427/215; 428/404; 433/201.1, 212.1; 623/16 :IMAGE AVAILABLE:

=> d 110 1  
'L10' NOT FOUND

=> d 15 1

1. 5,693,513, Dec. 2, 1997, Encapsulation of living tissue cells in an organosilicon; Edward J. A. Pope, 435/176, 182, 382 :IMAGE AVAILABLE:

=> d 14 7 clms

US PAT NO: 5,074,916 :IMAGE AVAILABLE:

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CLAIMS:

CLMS(1)

What is claimed is:

1. A bioactive composition prepared using a **sol-gel** process, and consisting essentially of more than 60 but no more than 86 weight percent SiO<sub>2</sub>, at least 4 but less than 33 weight percent CaO and at least 3 but no more than 15 weight percent P<sub>2</sub>O<sub>5</sub>.

CLMS(2)

2. The composition of claim 1 wherein the **bioactive glass** forms a hydroxyapatite layer upon exposure to body fluids.

CLMS(3)

3. The composition of claim 1, wherein the **bioactive glass** is produced as a powder using a **sol-gel** process.

CLMS(4)

4. The composition of claim 1, wherein the **bioactive glass** is produced as a monolith using a **sol-gel** process.

CLMS(5)

5. The composition of claim 1, wherein the **bioactive glass** is produced as a coating using a **sol-gel** process.

CLMS(6)

